Blue Gate Fields Junior School Design and Technology Curriculum Overview

	Project	Area of learning	Prior Learning: to inform designing	Key competencies	Links to other subjects	
Key Stage 1	Key stage 1 prior learning encompassed food technology, textiles, 2D and 3D modelling, simple wheel mechanism. Year 1: the pupils designed healthy salads, they designed and made hand puppets and made 2D/3D dinosaur models. Year 2: the pupils designed London scene using fabric, used dowel and wheels to make a moving vehicle, visited Pizza Express to design and make a pizza. Curriculum links were made to history (dinosaurs, castles and toys), geography (Europe and capital cities, Around the World) and famous chefs provided inspiration for food technology.					
Year 3	Moving toys: One Day…in the Savannah Shadow Theatre	Mechanisms and control: Linkages and Levers (moved by magnets)	Fixing, attaching methods • Use knowledge of what materials are attracted to a magnet • Use exploration of the way magnets behave • Use knowledge of the physical geography of rainforests	• Generate ideas, considering purpose and user • evaluate existing products • Create success criteria • Model ideas • Make design drawings • Select tools – use them safely • Measure, mark, cut out, assemble • Identify ways to improve • Evaluate against design criteria • Use language structures, precise vocabulary and evaluative talk to communicate ideas • Apply rules for basic food hygiene and safety	Autumn 2	Science: forces and magnets
					Autumn 1	Literacy: Rich text One Day…in the Savannah
	Design a seasonal snail snack	Food technology	• Use knowledge of nutrition in animals		Spring 2	Science: Animals including humans + Healthy eating
	Design a moving figure as a prop for story telling Leon and the place between	Mechanisms and control: Pneumatics	Fixing, attaching methods		Summer 2	Literacy: Rich text Leon and the place in between
Year 4	Lampshades: Oh! I do like to be beside the seaside!	Frame structures Textiles	Fixing, attaching methods • Use understanding of seaside locations in the British Isles • Use investigation of the changes in seaside use over time (chronological knowledge beyond 1066) – photographs, fashion, structures	• Generate ideas, considering purpose/user • Make labelled drawings showing specific features – use simple graphical communication • Plan: equipment and processes – adapt if needed • Select tools – use them safely • Measure, weigh, mark, cut, join accurately • Evaluate as work progresses – test • Use language structures, precise vocabulary and evaluative talk to communicate ideas • Apply rules for basic food hygiene and safety	Spring 1	Geography: The British Isles History: Historical change in the use of the seaside
	Fish to Food: Design a mackerel pate snack	Food technology Sustainability	Food hygiene • Use knowledge of the British Isles (coasts) to inform understanding of sustainable food production		Spring 1	Geography: the British Isles
	Stop the Darkness! Electrical circuits and switches	Circuits and switches	Fixing, attaching methods • Use knowledge of simple series electrical circuit • Use knowledge that a switch opens and closes a circuit • Use knowledge of insulators and conductors		Autumn 2	Science: Electricity
						Literacy: rich texts The King who banned the dark by Emily Haworth-Booth

Year 5	Automata	Levers, pulleys, cams and gears	Fixing, attaching methods • Use knowledge of properties of materials: hardness, transparency, conductivity (electrical and thermal) • use knowledge of the solar system	• Generate ideas through discussion- identify purposes • Create design specifications • Plan processes; make alternative suggestions if plans fail • Draw on learning from investigations • Select tools; use them safely and with the correct techniques • Measure, mark, weigh, cut out accurately • Consider the quality of finish of the product • Apply rules for basic food hygiene and safety • Evaluate against the original design specification. Evaluate personally and seek evaluations from others. • Use language structures, precise vocabulary and evaluative talk to communicate ideas	Autumn 2	Science: forces + motion
					Autumn 1	Science: Earth and Space ICT Computing: Coding
	A Healthy Wrap	Food technology: sustainability seasonality	Food hygiene • Use knowledge of the types and amounts nutrition needed to be healthy		Year 3 Spring 1	Science: Healthy eating
					Spring 1	Mathematics: costing, economics, comparisons
						Living things and their habitats Describe changes as humans develop – food and nutritional requirements
	An engineering challenge Beat the Flood: Design and build a model of a flood-proof house	Shell and frame structures Textiles	Fixing, attaching methods; structures and stability • Use knowledge of physical and topographical features of rivers • Use knowledge of climate and climate zones		Summer 1	Geography: Rivers and the water cycle
					Year 3 Summer 2	Rainforests: Climate zones
Year 6	Zoetropes	Shell structures Mechanisms for rotation	Fixing, attaching methods This learning will enable link making in the summer Term 1 Science: Light Light travels in straight lines	• Communicate ideas through detailed labelled drawings • Develop a design specification • Communicate proposals through modelling • Plan the order of work • Select appropriate tools, materials, components and techniques • Assemble components to make working models • Construct using permanent joining techniques • Modify throughout the design and make process • Achieve a quality product • Evaluate – identify strengths and areas for development and improvement– refer to original design criteria • Record using labelled drawings • Use language structures, precise vocabulary and evaluative talk to communicate ideas	Autumn 2	History: Changes in children's rights
	Bake Sale: Design a reusable/recyclable food wrapper	Food Enterprise Textiles Sustainability	Food hygiene Fixing, attaching methods • Use knowledge of the impact of diet and lifestyle on the way that bodies function		Spring 1	Science: Animals including Humans
						Mathematics: costing, economics, comparisons
	An engineering challenge Earthquake! Design and build a structure that will withstand a simulated earthquake. Crumble – control kit	Control and programming	Coding and programming • Use knowledge that programs can include choices to solve problems • Use knowledge that commands can be used to write a program • Use knowledge about 'if…then…' programs • Use knowledge of debugging of an algorithm		Year 3 Autumn 1	Earthquakes and volcanoes
					Year 6 Autumn 1	ICT Computing: Coding and programming
					Year 6 Spring 1 and 2	Geography: The Himalayas: locating the world's countries; using maps; physical and human characteristics